WEST Search History

DATE: Wednesday, January 08, 2003

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB; PLUR=YES; OP=ADJ			
L9	L8 and delta	57	L9
L8	L7 and (utr or untranslated region)	206	L8
L7	zein and transgenic	580	L7
L6	L4 and delta zein	16	L6
L5	L4 and delat zein	0	L5
L4	zein and delta	403	L4
L3	l1 and plant	0	L3
L2	l1 and zein	0	L2
L1	dzr1	11	L1

END OF SEARCH HISTORY

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TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS 2	Apr 08	"Ask CAS" for self-help around the clock
NEWS 3	Apr 09	BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS 4	Apr 09	ZDB will be removed from STN
NEWS 5	Apr 19	US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 6	Apr 22	Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 7	Apr 22	BIOSIS Gene Names now available in TOXCENTER
NEWS 8	Apr 22	Federal Research in Progress (FEDRIP) now available
NEWS 9	Jun 03	New e-mail delivery for search results now available
NEWS 10	Jun 10	MEDLINE Reload
NEWS 11	Jun 10	PCTFULL has been reloaded
NEWS 12	Jul 02	FOREGE no longer contains STANDARDS file segment
NEWS 13	Jul 22	USAN to be reloaded July 28, 2002; saved answer sets no longer valid
NEWS 14	Jul 29	Enhanced polymer searching in REGISTRY
NEWS 15	Jul 30	NETFIRST to be removed from STN
NEWS 16	Aug 08	CANCERLIT reload
NEWS 17	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 18	Aug 08	NTIS has been reloaded and enhanced
NEWS 19	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 20	Aug 19	IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS 21	Aug 19	The MEDLINE file segment of TOXCENTER has been reloaded
NEWS 22	Aug 26	Sequence searching in REGISTRY enhanced
NEWS 23	Sep 03	JAPIO has been reloaded and enhanced
NEWS 24	Sep 16	Experimental properties added to the REGISTRY file
NEWS 25	Sep 16	Indexing added to some pre-1967 records in CA/CAPLUS
NEWS 26	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS 27	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS 28	Oct 21	EVENTLINE has been reloaded
NEWS 29	Oct 24	BEILSTEIN adds new search fields
NEWS 30	Oct 24	Nutraceuticals International (NUTRACEUT) now available on STN
NEWS 31	Oct 25	MEDLINE SDI run of October 8, 2002
NEWS 32	Nov 18	DKILIT has been renamed APOLLIT
NEWS 33	Nov 25	More calculated properties added to REGISTRY
NEWS 34	Dec 02	TIBKAT will be removed from STN
NEWS 35	Dec 04	CSA files on STN
NEWS 36	Dec 17	PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS 37	Dec 17	TOXCENTER enhanced with additional content
NEWS 38	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 39	Dec 30	ISMEC no longer available

NEWS EXPRESS	January 6 CURRENT WINDOWS VERSION IS V6.01a, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002
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FILE 'HOME' ENTERED AT 10:36:47 ON 08 JAN 2003

=> file agricola caplus biosis
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FILE 'BIOSIS' ENTERED AT 10:36:58 ON 08 JAN 2003
COPYRIGHT (C) 2003 BIOLOGICAL ABSTRACTS INC.(R)

=> s delta zein
L1          30 DELTA ZEIN

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2           16 DUP REM L1 (14 DUPLICATES REMOVED)

=> d 1-16 ti

L2   ANSWER 1 OF 16  CAPLUS  COPYRIGHT 2003 ACS
TI   Expression of chimeric zein in transgenic plants for improving sulfur
     amino acid content

L2   ANSWER 2 OF 16  CAPLUS  COPYRIGHT 2003 ACS
TI   .beta.-Zein protein bodies sequester and protect the 18-kDa .delta
     .-zein protein from degradation

L2   ANSWER 3 OF 16  CAPLUS  COPYRIGHT 2003 ACS        DUPLICATE 1
TI   Zein protein interactions, rather than the asymmetric distribution of zein
     mRNAs on endoplasmic reticulum membranes, influence protein body formation
     in maize endosperm

L2   ANSWER 4 OF 16  CAPLUS  COPYRIGHT 2003 ACS
TI   Increasing maize seed methionine by mRNA stability

L2   ANSWER 5 OF 16  AGRICOLA                          DUPLICATE 2
TI   Genomics analysis of genes expressed in maize endosperm identifies novel
     seed proteins and clarifies patterns of zein gene expression.

L2   ANSWER 6 OF 16  CAPLUS  COPYRIGHT 2003 ACS
TI   Transgenic construct for high-level expression of high-methionine zein in
     corn seed unregulated by dzrl protein
```

L2 ANSWER 7 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Influence of the protein distribution of maize endosperm on ruminal starch degradability.

L2 ANSWER 8 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI A modified 10 kD zein protein produces two morphologically distinct protein bodies in transgenic tobacco.

L2 ANSWER 9 OF 16 AGRICOLA DUPLICATE 3
TI Surface localization of zein storage proteins in starch granules from maize endosperm: proteolytic removal by thermolysin and in vitro cross-linking of granule-associated polypeptides.

L2 ANSWER 10 OF 16 AGRICOLA DUPLICATE 4
TI Expression of a sulfur-rich maize seed storage protein, **delta-zein**, in white clover (Trifolium repens) to improve forage quality.

L2 ANSWER 11 OF 16 AGRICOLA DUPLICATE 5
TI Coexpression of the maize **delta-zein** and beta-zein genes results in stable accumulation of **delta-zein** in endoplasmic reticulum-derived protein bodies formed by beta-zein.

L2 ANSWER 12 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Targeted accumulation of the delta and beta zeins in novel protein bodies.

L2 ANSWER 13 OF 16 AGRICOLA DUPLICATE 6
TI Determinants of the high-methionine trait in wild and exotic germplasm may have escaped selection during early cultivation of maize.

L2 ANSWER 14 OF 16 AGRICOLA DUPLICATE 7
TI Immunocytochemical localization of **delta-zein** in the protein bodies of maize endosperm cells.

L2 ANSWER 15 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI IMMUNOCYTOCHEMICAL LOCALIZATION OF **DELTA ZEIN** IN THE PROTEIN BODIES OF MAIZE ENDOSPERM CELLS.

L2 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 8
TI Zein degradation in the endosperm of maize seeds during germination

=> d 3 au

L2 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
AU Kim, Cheol Soo; Woo, Young-min; Clore, Amy M.; Burnett, Ronald J.; Carneiro, Newton P.; Larkins, Brian A.

=> d ab

L2 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2003 ACS
AB The invention relates to construction of chimeric zeins contg. .beta. (15 kD) and .**delta**. **zein** (10 kD) jointed by a linker. The invention relates to transformed plants that are capable of expressing high levels of chimeric zein localized as protein bodies within the plant cell or accumulated to high levels as protein bodies in the vegetative tissue of the plant. Transformed plants co-expressing the 15 kD and 10 kD zein proteins are useful for providing forage crops contg. increased levels of sulfur contg. amino acids, such as methionine, in the diet of animals that normally feed on such crops. The protein bodies provided in the present invention are resistant to rumin digestion or environmental degrdn.

=> d pi

L2 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002086077	A2	20021031	WO 2002-US12646	20020418

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 2 ab

L2 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2003 ACS

AB The 18-kDa .delta.-class zein protein is characterized by having the highest mol% methionine content of any of the known zeins. Sequencing of the 18-kDa zein cDNA revealed an error in the published nucleotide sequence, which changes the 18-kDa amino acid sequence from residues 25 to 38. These changes result in a higher degree of homol. between the 10- and 18-kDa zeins than previously reported. Expression of the 18-kDa zein gene under the control of the CaMV 35S promoter results in stable transcript and protein accumulation in leaf tissues of transgenic tobacco. Co-expression of the 15- and 18-kDa zein genes followed by immunolocalization revealed that both proteins accumulate in the same protein bodies. Furthermore, there is a 16-fold increase in accumulation of the 18-kDa zein protein in co-expressing tobacco plants. Transgenic tobacco leaves co-expressing the 15- and 18-kDa zein genes, or expressing only the 18-kDa zein gene, accumulate the 18-kDa zein transcript to equal levels. This suggests that the 15-kDa zein protein stabilizes the 18-kDa zein protein when sequestered in protein bodies. The possibility of 18-kDa zein protein stabilization by the 15-kDa zein protein is further evidenced by L-[35S] methionine pulse-chase expts. A dramatic decrease in the rate of 18-kDa protein degrdn. in transgenic tobacco leaves co-expressing the 15- and 18-kDa zein genes was obsd. when compared with 18-kDa protein degrdn. in transgenic tobacco leaves expressing only the 18-kDa zein gene.

=> d 2 so

L2 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2003 ACS

SO Plant Science (Shannon, Ireland) (2002), 163(4), 741-752
CODEN: PLSCE4; ISSN: 0168-9452

=> d 4 ab

L2 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2003 ACS

AB The amino acid methionine is a common protein building block that is also important in other cellular processes. Plants, unlike animals, synthesize methionine de novo and are thus a dietary source of this nutrient. A new approach for using maize as a source of nutrient methionine is described. Maize seeds, a major component of animal feeds, have variable levels of protein-bound methionine. This variability is a result of post-transcriptional regulation of the Dzs10 gene, which encodes a seed-specific high-methionine storage protein. Here we eliminate

methionine variability by identifying and replacing the cis-acting site for Dzs10 regulation using transgenic seeds. Interestingly, two different mechanisms affect mRNA accumulation, one dependent on and the other independent of the untranslated regions (UTRs) of Dzs10 RNA. Accumulation of chimeric Dzs10 mRNA was not reduced in hybrid crosses and was uncoupled from genomic imprinting by Dzr1, a regulator of Dzs10. Uniform high levels of Dzs10 protein were maintained over five backcross generations of the transgene. The increased level of methionine in these transgenic seeds allowed the formulation of a useful animal feed ration without the addn. of synthetic methionine.

=> d 4 so

L2 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2003 ACS
SO Plant Journal (2002), 30(4), 395-402
CODEN: PLJUED; ISSN: 0960-7412

=> d 4 so

L2 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2003 ACS
SO Plant Journal (2002), 30(4), 395-402
CODEN: PLJUED; ISSN: 0960-7412

=> d 4 au

L2 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2003 ACS
AU Lai, Jinsheng; Messing, Joachim

=> d 6 ab

L2 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2003 ACS
AB The present invention provides novel DNA constructs encoding high methionine zein proteins, the expression of which is not neg. regulated by the dzrl regulatory protein. The constructs of the invention comprise a . **delta**.-**zein** coding region operably linked to a promoter and a 3' UTR which has been modified so as to be devoid of any binding sites for the dzrl regulatory protein. Preferably, the entire 3' UTR is replaced by a heterologous sequence that does not contain any dzrl binding sites. Transgenic corn plants comprising the DNA constructs of the invention are also provided. These plants consistently produce high methionine corn seeds.

=> d 6 pi

L2 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000012681	A1	20000309	WO 1999-US20308	19990825
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9958089	A1	20000321	AU 1999-58089	19990825
	EP 1108009	A1	20010620	EP 1999-945499	19990825

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

=> d 8 ab

L2 ANSWER 8 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB The 10 kD zein protein contains an N-terminal signal peptide that directs the protein into the endoplasmic reticulum (ER) of developing corn seeds. Subsequent to signal peptide removal, the mature protein is folded into its tertiary conformation and deposited into protein bodies. In transgenic tobacco leaves, the 10 kD zein protein accumulates and forms novel ER derived protein bodies (S. Bagga, H. Adams, F. Rodriquez, J.D. Kemp, C. Sengupta-Gopalan, Coexpression of the maize **delta-zein** and beta-zein genes results in stable accumulation of **delta-zein** in endoplasmic reticulum-derived protein bodies formed by beta-zein, The Plant Cell 9 (1997) 1683-1696). In this study, the amino acid sequence of the 10 kD zein signal peptide was modified to determine the effect on cleavage and accumulation patterns. The modified zein gene was constitutively expressed in tobacco where its protein accumulates in novel protein bodies in leaves. Amino acid sequencing of the accumulated protein indicates that the cleavage site for the signal peptide was altered so that the mature protein includes three additional amino acids on the N-terminus. Electron microscopy (EM) analysis of leaves from transgenic plants containing the modified gene indicates the presence of two morphologically distinct protein bodies. Furthermore, immunolocalization analysis shows that the modified protein is localized in both types of protein bodies, which are described as spherical and aggregate in this report. This is in contrast to the accumulation of unmodified 10 kD zein protein in transgenic leaves where only spherical protein bodies are observed.

=> d 8 so

L2 ANSWER 8 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Plant Science (Shannon), (Jan. 14, 2000) Vol. 150, No. 1, pp. 21-28. ISSN: 0168-9452.

=> d 10 ab

L2 ANSWER 10 OF 16 AGRICOLA DUPLICATE 4
AB A modified gene encoding a sulfur-rich maize seed storage protein, **delta-zein**, was introduced into white clover plants by Agrobacterium-mediated transformation. Expression of the gene was under the control of the double 35S promoter of cauliflower mosaic virus and the nopaline synthase gene transcription terminator. All of the transgenic plants expressing transgene-specific mRNA also accumulated **delta-zein** in their leaves. Levels of the HA epitope tagged **delta-zein** in the first fully expanded young leaves of different transgenic plants varied from 0.06 to 0.3% of total water-soluble protein. Expression of the protein was also detected in petioles, nodes, internodes, roots and seeds of the transgenic plants. N-terminal sequencing of the modified **delta-zein** from transgenic plants revealed that the protein is processed in white clover leaves as in maize seeds. All the transgenic plants expressing the **delta-zein** showed monogenic inheritance of the linked nptII gene conferring kanamycin resistance. The epitope tagged **delta-zein** is relatively stable in white clover leaves and in the highest expressing plants, its accumulation increased with increasing leaf age from 0.3 (youngest leaves) to 1.3% (oldest leaves) of total water-soluble protein. These results open up the possibility of using sulfur-rich and rumen-protected **delta-zein** to

improve white clover forage quality.

=> d 10 so

L2 ANSWER 10 OF 16 AGRICOLA DUPLICATE 4
SO Molecular breeding : new strategies in plant improvement, Oct 1998. Vol. 4, No. 5. p. 435-448
Publisher: Dordrecht ; Boston : Kluwer Academic Publishers, c1995-
CODEN: MOBRFL; ISSN: 1380-3743

=> d 12 ab

L2 ANSWER 12 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

=> d 12 so

L2 ANSWER 12 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Plant Physiology (Rockville), (1997) Vol. 114, No. 3 SUPPL., pp. 69.
Meeting Info.: PLANT BIOLOGY '97: 1997 Annual Meetings of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists, Japanese Society of Plant Physiologists and the Australian Society of Plant Physiologists Vancouver, British Columbia, Canada August 2-6, 1997
ISSN: 0032-0889.

=> s dzr1
L3 10 DZR1

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4 4 DUP REM L3 (6 DUPLICATES REMOVED)

=> d 1-4 ti

L4 ANSWER 1 OF 4 AGRICOLA DUPLICATE 1
TI Increasing maize seed methionine by mRNA stability.

L4 ANSWER 2 OF 4 AGRICOLA DUPLICATE 2
TI RFLP mapping of the maize **dzr1** locus, which regulates methionine-rich 10 kDa zein accumulation.

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS
TI Genetic analysis of **dzr1**, a regulator of high-methionine zein expression in maize

L4 ANSWER 4 OF 4 AGRICOLA DUPLICATE 3
TI Allele-specific parental imprinting of **dzr1**, a posttranscriptional regulator of zein accumulation.

=> d ab

L4 ANSWER 1 OF 4 AGRICOLA DUPLICATE 1
AB The amino acid methionine is a common protein building block that is also important in other cellular processes. Plants, unlike animals, synthesize methionine de nova and are thus a dietary source of this nutrient. A new approach for using maize as a source of nutrient methionine is described. Maize seeds, a major component of animal feeds, have variable levels of protein-bound methionine. This variability is a result of post-transcriptional regulation of the Dzs10 gene, which encodes a

seed-specific high-methionine storage protein. Here we eliminate methionine variability by identifying and replacing the cis-acting site for Dzs10 regulation using transgenic seeds. Interestingly, two different mechanisms affect mRNA accumulation, one dependent on and the other independent of the untranslated regions (UTRs) of Dzs10 RNA. Accumulation of chimeric Dzs10 mRNA was not reduced in hybrid crosses and was uncoupled from genomic imprinting by **Dzr1**, a regulator of Dzs10. Uniform high levels of Dzs10 protein were maintained over five backcross generations of the transgene. The increased level of methionine in these transgenic seeds allowed the formulation of a useful animal feed ration without the addition of synthetic methionine.

=> d so

L4 ANSWER 1 OF 4 AGRICOLA DUPLICATE 1
SO The Plant journal : for cell and molecular biology, May 2002. Vol. 30, No. 4. p. 395-402
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 3 ab

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS
AB Unavailable

=> d 3 pi

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS

=> d 3 so

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS
SO (1994) 100 pp. Avail.: Univ. Microfilms Int., Order No. DA9511971
From: Diss. Abstr. Int. B 1995, 55(12) 5181

=> d 4 ab

L4 ANSWER 4 OF 4 AGRICOLA DUPLICATE 3
AB Parental imprinting describes the phenomenon of unequivalent gene function based on transmission from the female or male parent. We have discovered parental imprinting of an allele of the **dzr1** locus that posttranscriptionally regulates the accumulation of 10-kDa zein in the maize endosperm. The imprinted allele of MO17 inbred origin, **dzr1** +MO17, conditions low accumulation of the 10-kDa zein and is dominant when transmitted through the female but recessive when transmitted through the male. Analyzing endosperms with equal parental contributions of **dzr1**+MO17 ruled out the possibility that the unequivalent phenotype of **dzr1**+MO17 was due to parental dosage imbalance in the triploid endosperm. Second-generation studies show that the dominant or recessive phenotype of **dzr1**+MO17 is determined at every generation based on immediate parental origin with no grandparental effect.

=> d 4 so

L4 ANSWER 4 OF 4 AGRICOLA DUPLICATE 3
SO Proceedings of the National Academy of Sciences of the United States of America, May 24, 1994. Vol. 91, No. 11. p. 4867-4871

Publisher: Washington, D.C. : National Academy of Sciences,
CODEN: PNASA6; ISSN: 0027-8424

=> d 2 so

L4 ANSWER 2 OF 4 AGRICOLA DUPLICATE 2
SO Molecular & general genetics : MGG, Mar 20, 1995. Vol. 246, No. 6. p. 707-715
Publisher: Berlin, Germany : Springer Produktions-Gesellschaft.
CODEN: MGGEAE; ISSN: 0026-8925

=> d 2 ab

L4 ANSWER 2 OF 4 AGRICOLA DUPLICATE 2
AB The **dzr1** locus in maize posttranscriptionally regulates the accumulation of methionine-rich 10 kDa zein in the endosperm. An allele of this locus present in the inbred line BSSS53, **dzr1** + BSSS53, conditions several-fold higher accumulation of the 10 kDa zein in comparison with standard inbred lines, leading to enrichment of methionine content in BSSS53 by 30%. In a population segregating for high and low 10 kDa zein, **dzr1** + BSSS53 was found tightly to cosegregate with a 22 kDa zein gene cluster, belonging to the Z1C subfamily of alpha-zeins that is located on chromosome 4S. One member of this gene cluster, azs22/6, was estimated to be located less than 0.4 cM from **dzr1** + BSSS53, while three other 22 kDa zein genes mapped 3.4 cM away. Restriction fragment length polymorphism (RFLP) mapping of **dzr1** was conducted using additional maize DNA markers and orthologous rice DNA markers. One maize marker, php20725, was identified that mapped 1.1 cM from **dzr1**, proximal to the centromere. Another marker derived from rice, rz329, mapped 6.6 cM distal to **dzr1**. Pulsed-field gel electrophoresis (PFGE) of the 22 kDa zein cluster showed that probably all copies of the 22 kDa zein genes are present within a 200 kb SalI fragment. The recombination frequency within this cluster was estimated to be 20-fold higher than that predicted for the maize genome.

=> d 2 so

L4 ANSWER 2 OF 4 AGRICOLA DUPLICATE 2
SO Molecular & general genetics : MGG, Mar 20, 1995. Vol. 246, No. 6. p. 707-715
Publisher: Berlin, Germany : Springer Produktions-Gesellschaft.
CODEN: MGGEAE; ISSN: 0026-8925

=> s zein near 10
L5 0 ZEIN NEAR 10

=> s zein and 10
L6 682 ZEIN AND 10

=> s l6 and (utr or untranslated region)
L7 0 L6 AND (UTR OR UNTRANSLATED REGION)

=> s zein and (utr or untranslated region)
L8 13 ZEIN AND (UTR OR UNTRANSLATED REGION)

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9 7 DUP REM L8 (6 DUPLICATES REMOVED)

=> d 1-7 ti

L9 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2003 ACS
TI Increasing maize seed methionine by mRNA stability

L9 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS
TI Transgenic construct for high-level expression of high-methionine **zein** in corn seed unregulated by dzrl protein

L9 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
TI Accumulation of maize .gamma.-**zein** and .gamma.-**zein**: KDEL to high levels in tobacco leaves and differential increase of BiP synthesis in transformants

L9 ANSWER 4 OF 7 AGRICOLA DUPLICATE 2
TI Opaque2 modifiers alter transcription of the 27-kDa gamma-**zein** genes in maize.

L9 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 3
TI Algorithmic approach to high-throughput molecular screening for alpha interferon-resistant genotypes in hepatitis C patients

L9 ANSWER 6 OF 7 AGRICOLA DUPLICATE 4
TI A functional splice site in the 5' **untranslated region** of a **zein** gene.

L9 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5
TI Translation efficiency of **zein** mRNA is reduced by hybrid formation between the 5'- and 3'-**untranslated region**

=> d 7 ab

L9 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5
AB The secondary structure of **zein** mRNA affects its translational potential. In a cell-free system, the translation efficiency of **zein** mRNA contg. inverted repeats in the 5'- and 3'-untranslated regions is reduced. This translational block is released after deletion of the 3'-inverted repeat. Apparently, the translational block is caused by hybrid formation between the 2 inverted repeats. The translational efficiency of **zein** mRNAs is also affected by varying the length or the primary structure of the 5'-**untranslated region**
.

=> d 7 so

L9 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5
SO EMBO Journal (1985), 4(9), 2153-8
CODEN: EMJODG; ISSN: 0261-4189

=> s zein and transgenic
L10 157 ZEIN AND TRANSGENIC

=> s l10 and dzr1
L11 1 L10 AND DZR1

=> d pi

L11 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS

=> d ti

L11 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
TI Increasing maize seed methionine by mRNA stability

=> d so

L11 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
SO Plant Journal (2002), 30(4), 395-402
CODEN: PLJUED; ISSN: 0960-7412

=> s l10 and (10 or ten or delta)
L12 46 L10 AND (10 OR TEN OR DELTA)

=> dup rem l12
PROCESSING COMPLETED FOR L12
L13 31 DUP REM L12 (15 DUPLICATES REMOVED)

=> d 1-10 ti

L13 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Expression of chimeric **zein** in **transgenic** plants for improving sulfur amino acid content

L13 ANSWER 2 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Identification and molecular cloning of sterol metabolism enzymes from plants

L13 ANSWER 3 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Detection and Quantification of Transgenes in Grains by Multiplex and Real-Time PCR

L13 ANSWER 4 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI .beta.-**Zein** protein bodies sequester and protect the 18-kDa . **delta**.-**zein** protein from degradation

L13 ANSWER 5 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Increasing maize seed methionine by mRNA stability

L13 ANSWER 6 OF 31 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI PCR detection of **transgenic** elements in feed raw material.

L13 ANSWER 7 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Manufacture of fructose polymers in plastids of monocotyledonous plants using the sacB fructosyltransferase of Bacillus

L13 ANSWER 8 OF 31 AGRICOLA
TI Validation of PCR methods for quantitation of genetically modified plants in food.

L13 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Increase of sulfur-containing amino acids in **transgenic** potato with **10** ku **zein** gene from maize

L13 ANSWER 10 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI **Transgenic** construct for high-level expression of high-methionine **zein** in corn seed unregulated by dzrl protein

=> d 9 ab

L13 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2003 ACS
AB The **10** ku **zein** gene of maize was under control of patatin class I promoter of potato and transferred into potato genome by

the leaf-disk method. The expression of **10** ku **zein** was detd. in the tuber of **transgenic** plants by RT-PCR. Furthermore, the sulfur-contg. amino acids in **transgenic** tuber increase remarkably.

=> d 9 so

L13 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2003 ACS
SO Chinese Science Bulletin (2001), 46(6), 482-484
CODEN: CSBUEF; ISSN: 1001-6538

=> d 11-20 ti

L13 ANSWER 11 OF 31 AGRICOLA DUPLICATE 1
TI A modified **10** kD **zein** protein produces two morphologically distinct protein bodies in **transgenic** tobacco.

L13 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Co-expression of stable storage proteins in **transgenic** plants

L13 ANSWER 13 OF 31 AGRICOLA DUPLICATE 2
TI Expression of a sulfur-rich maize seed storage protein, **delta-zein**, in white clover (Trifolium repens) to improve forage quality.

L13 ANSWER 14 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Control of plant metabolism and seed and storage organ composition using ribozymes

L13 ANSWER 15 OF 31 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI **Transgenic** maize with elevated **10** KD **zein** and methionine.

L13 ANSWER 16 OF 31 AGRICOLA DUPLICATE 3
TI Coexpression of the maize **delta-zein** and beta-**zein** genes results in stable accumulation of **delta-zein** in endoplasmic reticulum-derived protein bodies formed by beta-**zein**.

L13 ANSWER 17 OF 31 AGRICOLA
TI **Transgenic** maize with elevated **10** KD **zein** and methionine.

L13 ANSWER 18 OF 31 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Modified **10** kD protein produces two types of protein bodies in **transgenic** tobacco.

L13 ANSWER 19 OF 31 AGRICOLA DUPLICATE 4
TI The maize gamma-**zein** sequesters alpha-**zein** and stabilizes its accumulation in protein bodies of **transgenic** tobacco endosperm.

L13 ANSWER 20 OF 31 AGRICOLA
TI Analysis of kafirin promoter activity in **transgenic** tobacco seeds.

=> d 12 ab

L13 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2003 ACS
AB The subject invention pertains to materials and methods for transformed plants and plant tissues that are capable of expressing high levels of

stable proteins which are localized as protein bodies within the plant cell. Transformed plants co-expressing high levels of both the 15-kDa and **10**-kDa **zein** proteins are disclosed which accumulate to high levels as protein bodies in the vegetative tissue of the plant. Transformed plants co-expressing the 15-kDa and **10**-kDa **zein** proteins are useful for providing forage crops contg. increased levels of sulfur-contg. amino acids, such as methionine, in the diet of animals that normally feed on such crops. Also contemplated by the subject invention are transformed plants or plant tissue comprising stable protein bodies which contain heterologous proteinaceous material. In one embodiment, a stable protein body is expressed in a plant or plant tissue as a fusion protein comprising a **zein** protein and an operably linked protein or peptide. The protein bodies provided in the present invention are resistant to rumen digestion or environmental degrdn.

=> d 12 so

L13 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2003 ACS
SO U.S., 20 pp.
CODEN: USXXAM

=> d 12 pi

L13 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5990384	A	19991123	US 1997-866879	19970530

=> d 16 ab

L13 ANSWER 16 OF 31 AGRICOLA DUPLICATE 3
AB Zeins, The major seed storage proteins of maize, are of four distinct types: alpha, beta, **delta**, and gamma. They are synthesized on the rough endoplasmic reticulum (ER) in a sequential manner and deposited in ER-derived protein bodies. We investigated the potential for producing sulfur-rich beta-**zein** and **delta-zein** proteins in leaf and seed tissues by expressing the corresponding genes in a constitutive manner in tranegenic tobacco. The **delta-zein**, and beta-**zein**, when synthesized individually, were stable in the vegetative tissues and were deposited in unique, **zein**-specific ER-derived protein bodies. Coexpression of **delta-zein** and beta-**zein** genes, however, showed that **delta-zein** was colocalized in beta-**zein**-containing protein bodies and that the level of **delta-zein** was fivefold higher in **delta**-/beta-**zein** plants then in **delta-zein** plants. We conclude that **delta-zein** interacts with beta-**zein** and that the interaction has a stabilizing effect on **delta-zein**
.

=> d 16 so

L13 ANSWER 16 OF 31 AGRICOLA DUPLICATE 3
SO The Plant cell, Sept 1997. Vol. 9, No. 9. p. 1683-1696
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651

=> d 17 ab

L13 ANSWER 17 OF 31 AGRICOLA

=> d 17 so

L13 ANSWER 17 OF 31 AGRICOLA
SO [Sulphur metabolism in higher plants : molecular, ecophysiological and nutritional aspects], p. 295-297
Publisher: Leiden : Backhuys, c1997.
ISBN: 9073348137.

=> d 21-31 ti

L13 ANSWER 21 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI **Transgenic** fructan-accumulating crops and the use of a bacterial fructosyltransferase gene in their construction

L13 ANSWER 22 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Transformation and selection of maize tissue and the regeneration of stably transformed fertile plants

L13 ANSWER 23 OF 31 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5
TI Translational enhancement by the 5' leader of tobacco mosaic virus and soybean glycinin gene in **transgenic** tobacco plants

L13 ANSWER 24 OF 31 AGRICOLA DUPLICATE 6
TI Differences in cell type-specific expression of the gene Opaque 2 in maize and **transgenic** tobacco.

L13 ANSWER 25 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI A method of obtaining high methionine-containing corn seeds, and improvement of growth performance of poultry with this corn.

L13 ANSWER 26 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI A high sulfur seed protein gene from corn for increasing the sulfur amino acid content of plants

L13 ANSWER 27 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Promoter sequence of soybean glycinin gene regulates seed-specific expression in **transgenic** tobacco plant

L13 ANSWER 28 OF 31 AGRICOLA DUPLICATE 7
TI Normal and lysine-containing zeins are unstable in **transgenic** tobacco seeds.

L13 ANSWER 29 OF 31 CAPLUS COPYRIGHT 2003 ACS
TI Agrobacterium-mediated transformation of germinating plant seeds

L13 ANSWER 30 OF 31 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 8
TI Expression of a maize storage protein gene in petunia plants is not restricted to seeds

L13 ANSWER 31 OF 31 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 9
TI Endosperm-specific activity of a **zein** gene promoter in **transgenic** tobacco plants

=> d 31 ab

L13 ANSWER 31 OF 31 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 9
AB **Transgenic** tobacco plants contg. a maize gene (Z4) encoding a

23-kd **zein** protein, which is normally synthesized in the endosperm of maize seeds, were obtained by using a modified Ti plasmid vector. Although a polyadenylated transcript homologous to the Z4 gene was present in the seeds of some of these **transgenic** plants, **zein** protein could not be detected in any of the plants tested (35 total). To simplify the anal. of the tissue specificity of the Z4 promoter (Z4pro) in different organs of transformed tobacco plants, addnl. **transgenic** plants contg. the chimeric genes Z4pro-CAT and Z4pro-GUS were produced. Very weak seed-specific CAT activity was obsd. in 1 of **10** Z4pro-CAT-transformed plants. When the more sensitive *GUS* assay system was used to evaluate Z4pro activity in tobacco, it could be shown in all 11 **transgenic** plants obtained that GUS activity was restricted to the endosperm tissue of **transgenic** tobacco seeds. To study the synthesis and stability of the **zein** protein in different organs of **transgenic** tobacco plants, the Z4 protein-coding region and also a cDNA clone (A30) encoding a 19-kd **zein** protein were placed under the control of the 35 S promoter (35 Spro) of cauliflower mosaic virus. Undegraded **zein** proteins *of both size classes were detected in roots, leaves, and endosperm* tissue, but not embryos, of mature seeds from 35 Spro-**zein**-transformed plants. The **zein** proteins were not broken down during tobacco seed germination; synthesis of zeins began in green cotyledons.

=> dis his

(FILE 'HOME' ENTERED AT 10:36:47 ON 08 JAN 2003)

FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 10:36:58 ON 08 JAN 2003

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L1          30 S DELTA ZEIN
L2          16 DUP REM L1 (14 DUPLICATES REMOVED)
L3          10 S DZR1
L4           4 DUP REM L3 (6 DUPLICATES REMOVED)
L5           0 S ZEIN NEAR 10
L6         682 S ZEIN AND 10
L7           0 S L6 AND (UTR OR UNTRANSLATED REGION)
L8          13 S ZEIN AND (UTR OR UNTRANSLATED REGION)
L9           7 DUP REM L8 (6 DUPLICATES REMOVED)
L10        157 S ZEIN AND TRANSGENIC
L11          1 S L10 AND DZR1
L12         46 S L10 AND (10 OR TEN OR DELTA)
L13         31 DUP REM L12 (15 DUPLICATES REMOVED)
```